

REDUCING THE OVERHEAD INVOLVED IN EXECUTING NATIVE CODE IN A VIRTUAL MACHINE THROUGH BINARY REOPTIMIZATION

ABSTRACT

One embodiment of the present invention provides a system that reduces the overhead involved in executing a native code method in an application running on a virtual machine. During operation, the system selects a call to a native code method to be optimized within the virtual machine. The system then decompiles at least part of the native code method into an intermediate representation. The system also obtains an intermediate representation associated with the application running on the virtual machine. Next, the system combines the intermediate representation for the native code method with the intermediate representation associated with the application running on the virtual machine to form a combined intermediate representation. The system then generates native code from the combined intermediate representation, wherein the native code generation process optimizes interactions between the application running on the virtual machine and the native code method. In a variation on this embodiment, optimizing interactions between the application and the native code method involves optimizing callbacks by the native code method into the virtual machine.